

**ABSTRACT OF THE DISCLOSURE**

A method of increasing expression of a molecular chaperon by a cell and/or enhancing the activity of a molecular chaperon in cells is provided. The method comprises treating a cell that is exposed to a physiological stress which induces expression of a molecular chaperon by the cell with an effective amount of a certain hydroxylamine derivative to increase the stress. Alternatively, an hydroxylamine derivative can be administrated to a cell before it is exposed to a physiological stress which induces expression of a molecular chaperon by the cell. Preferably, the cell to which an hydroxylamine derivative is administered is an eukaryotic cell. The hydroxylamine derivative corresponds to the formulae (I) or (II).

The invention also provides novel hydroxylamine derivatives falling within the scope of the formulae (I) and (II) as well as pharmaceutical and/or cosmetical compositions comprising the said compounds.